REMARKS

Rejections under 35 U.S.C. §103

Claims 1-2, 4-14, 16-37, 39-40, 42-46, 48-50, 52-59 and 61-67 were rejected

under 35 U.S.C. §103(a) as being unpatentable over Goguen in view of Chuah (U.S.

Patent 6,496,491) and further in view of Perlman (U.S. Patent Application 5,870,386).

Chuah:

Chuah describes, in the abstract, an "apparatus for transferring packet data

incorporates a "hand-off" feature that allows the transfer of an existing PPP connection

from one packet server to another packet server. Such a hand-off control message or call

continue transaction can be initiated by any of the servers involved in the transactions..."

At column 17 lines 37 through column 18, lines 15, Chuah describes when

tunnels are converted from a single hop to a two hop, and a two hop to a one hop

arrangement.

Goguen:

Goguen describes, at column 6, lines 52-56 a system for "...dynamically adjusting

a bandwidth of a Multi-protocol Label Switching (MPLS) system traffic engineering

(TE) tunnel based on actual traffic flow through the tunnel. Generally, the network

devices using the MPLS system keep track of byte counts through the TE tunnel.

Knowledge of the actual traffic flow through a tunnel enables dynamic adjustment of the

bandwidth, which in turn allows for allocation of sufficient resources to service the

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traffic. In one instance, excess bandwidth is reallocated elsewhere by the network

devices..."

Goguen describes, at column 7, lines 65- column 8 lines 6:

"... An improved MPLS system determines the actual traffic that flows
through the configured TE tunnels and dynamically re-configures the tunnel
bandwidth to reflect the traffic flow. The TE module 710 notified of the change
initiates a path setup procedure to find a path that is able to accommodate the
adjusted bandwidth. If the calculated path is the same as the current path, the
setup procedure may terminate and the current path is used with the new adjusted
bandwidth. Alternatively, the setup procedure is initiated as described with
respect to FIG. 2, where the newly established tunnel that meets the adjusted
bandwidth and other constraints in the configuration table, replaces the old tunnel
and the old tunnel is torn down. The actual traffic may be determined by
accessing the byte counters 772 kept within the physical link management module
770..."

Thus Goguen describes a technique which involves reconfiguring links of a tunnel

to meet the bandwidth requirements of the traffic that travels through the tunnel.

Perlman:

Perlman describes, in the abstract:

"...A technique for logically connecting local area networks (LANs) that may be
separated by wide area networks containing routers and other network
components. A logical link is formed between two bridge-like devices called
tunnelers, such that, once a tunnel has been established between two LANs, other
devices on the LANs can communicate as if the tunnel were a bridge ... A tunnel
is established after a successful exchange of messages between two tunnelers, and
then traffic may be forwarded through the tunnel in a transparent manner. The
tunneling mechanism permits messages to be forwarded between LANs separated
by a wide area network containing routers. Moreover, the mechanism permits
filtering of traffic, such that only selected types of traffic, or messages for selected
destinations or from selected sources, are forwarded through tunnels...."

Perlman further states, at column 6, lines 27-31:

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"... The tunnel may be used for only selected protocols, or for all types of traffic, or for traffic involving only selected destinations or sources, all at the option of the network manager..."

Applicants submit that although Perlman teaches that the tunnel may be used for traffic involving only selected destinations, no teaching or suggestion is found in Perlman, Goguen, or the combination thereof, of the 'selectively routing only information destined for serviced destinations ...' wherein the service destinations are destinations defined to be a predetermined number of hops from said tail end device, as recited in each of applicant's independent claims. Applicants further submit that no such structure is shown by the additional combination of Chuah, despite the Examiner's statement that Chuah teaches that tunnels can increase or decrease in size.

The Examiner states, at pages 4 – 5 of the Office Action:

"... Regarding claim 1, establishing a tunnel to said tail-end device as one of said number of routes is disclosed in Goguen, column 2, lines 29-33. Determining a number of said destinations within a predetermined number of hops of said tail-end device to identify serviced destination is missing from Goguen. However, Chuah ... discloses in column 17, line 38-column 18, line 15, tunnels that can increase or decrease their number of hops based on congestion in the tunnel..."

It would appear that the Examiner is maintaining that extending the length of a tunnel, or reducing the length of the tunnel, is the same thing as selectively allowing packets to pass through a tunnel, in response a distance relationship between a tail end of the tunnel, and the destination node. Applicants would strongly disagree that this is the case; there is no re-architecting the tunnel in the present invention. Rather, a decision is

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made, before data is input to the tunnel, whether to actually place the data into the tunnel.
The decision is based on a relationship between the address of the destination of the data,
and the end point of the tunnel. Applicants can find no teaching, in any combination of
the reference provided by the Examiner, of such a construct. However, in order to clarify
the fact that the destination address is not within the tunnel, or the address of the tail
endpoint of the tunnel, Applicant's have amended each of the independent claims to
include the language 'wherein the predetermined number is at least one.'

At page 11 of the office action, with regard to prior claim 2, the Examiner stated
"... Regarding claim 2, said serviced destinations comprise directly connected
hosts/subnets of said tail-end device is missing from Goguen. However, Chuah
(6,519,254) discloses in Figure 3, a tail end device (element 25) that is an ISP, which is
directly connected to the destinations it services. It would have been obvious to one
skilled in the art .... to service destinations directly connected to the end of the tunnel.
The motivation would be to use the tunnel as the fastest route to a group of destinations
connected to the end of the tunnel. The predetermined number of hops being one is
missing from Goguen. However, it is generally considered to be within the ordinary skill
in the art to adjust, vary, select or optimize the numerical parameters or values of any
system absent a showing of criticality in a particular recited value..."

Upon reading the Examiner's above statements, it appears that the Examiner is
not giving patentable weight to the limitations of the claims. In particular, the Examiner
is failing to notice an advantage of the claimed invention. In contrast to the Examiner's
statement that 'It would have been obvious ... to service destinations directly connected to
the end of the tunnel...' the present invention actually controls *which* destinations that are

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connected to the tunnel are serviced. As mentioned in the specification of this application, this feature allows congestion in the tunnel to be reduced. Thus, even if Chuah's tail end device is an ISP, there is no mention or suggestion in the combination of references provided by the Examiner of the packets being selected for entry into the tunnel based on a number of hops from the tail end device. Such limitations are clear in Applicants independent claims, such as claim 1, which recites "...determining a number of said destinations within a predetermined number of hops of said tail-end device to *identify serviced destinations*, wherein the predetermined number is at least one; and *selectively routing only information destined for said serviced destinations through said tunnel...*"

Accordingly, for at least the reason that the combination of references fails to describe or suggest any criteria for selecting packets that are input to a tunnel based on the hop count relationship between the tail end of the tunnel and the destination, all of the independent claims are patentably distinct over the combination of references, and the rejection should be withdrawn. The dependent claims are patentable for at least the same reasons as their parent independent claims.

Claims 69-70, 72-74 and 76:

Claims 69-70, 72-74 and 76 were rejected under 35 U.S.C. §103(a) as being unpatentable over Goguen in view of Chuah.

Claim 69 recites "...wherein said head-end device is operably coupled to determine a number of said destinations that are serviced by said tail-end device and

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route information to said serviced destinations over said tunnel, wherein destinations are determined to be serviced by said tail-end device responsive to the destinations being within a predetermined number of hops of the tail-end device, wherein the predetermined number is at least one..." Thus, claim 69 includes limitations which have been shown and described above to be patentably distinct over the combination of Goguen and Chuah. For at least the reason that the combination of references fail to teach or describe the limitations the claim, claim 69 and its dependent claims 70, 72-74 and 76 are patentable over the references, and the rejection should be withdrawn.

Claims 38 and 68:

Claims 38 and 68 were rejected under 35 U.S.C. §103(a) as being unpatentable over Goguen in view of Goebel. The Examiner relies on Goebel as supporting the limitation of a computer program being embodied as a data signal. Goebel describes a method of allocating registers when compiling code. Applicants note that the combination of Goebel with Goguen fails to overcome any of the inadequacies pointed out above with regard to Goguen. For at least the reason that the combination of references fail to teach or describe the limitations of the parent independent claims, claims 38 and 68 are patentable over the references, and the rejection should be withdrawn.

Claims 47 and 75:

Claims 47 was rejected under 35 U.S.C. §103 as being unpatentable over Goguen in view of Perlman and Chuah and further in view of Swallow. Claim 75 was rejected under 35 U.S.C. §103(a) as being unpatentable over Goguen in view of Chuah and

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further in view of Swallow. The Examiner relies on Swallow as supporting the limitation of removing the label from the information and forwarding said information to said destinations based upon destination address information. Swallow describes, in the abstract, "...a network communications tunnel is established by assigning a unique label to each communications link between adjacent nodes in a pre-defined network path. A node's unique label is used to forward a data packet to the adjacent node in the pre-defined path. The unique labels for all the nodes in the pre-defined path are stored by each node in the tunnel..." As noted above, Applicants note that the combination of Goebel with Swallow fails to overcome any of the inadequacies pointed out above with regard to Goguen, and Chuah, namely Swallow neither describes nor suggests selective tunneling based on a relationship between the address of the destination and the tail-end of the tunnel. For at least the reason that the combination of references fail to teach or describe the limitations of the parent independent claims, claims 47 and 75 are patentable over the references, and the rejection should be withdrawn.

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Conclusion

Applicants have made a diligent effort to place the claims in condition for

allowance. However, should there remain unresolved issues that require adverse action, it

is respectfully requested that the Examiner telephone Lindsay McGuinness, Applicants'

Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as

possible.

For these reasons, and in view of the above amendments, this application is now

considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

Date

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